

CLAIMS

1. A heating device (1) for fluids for mounting in a continuous flow heater (100), comprising at least one heating element (2) embodied as an electric resistance heater and at least one heat exchanging element (3) which is connected in a heat-conducting manner to the heating element (2) and the fluid so as to transfer the heat generated by the heating element (2) to the fluid, characterised in that the heat exchanging element (3) forms an integral housing component of a pressure-resistant and temperature-resistant continuous flow heater and has a substantially planar central area (4) on which the heating element (2) is mounted.
2. The heating device according to claim 1, characterised in that the heating element (2) comprises a number of electrically interconnected heating sections (5) which substantially cover the entire central area (4), wherein a mounting area (6) is left through the heating sections.
3. The heating device according to claim 2, characterised in that the heating element (2) comprises at least one heating circuit through electrical connection of corresponding heating sections (5).
4. The heating device according to any one of the preceding claims, characterised in that the heating element (2) is formed from a material having a positive temperature characteristic (PTC).
5. The heating device according to any one of the preceding claims, characterised in that there is provided a temperature monitoring device (8) disposed on the heat exchanging element (3) which is in good heat-conducting connection with the heat exchanging device (3).
6. The heating device according to claim 5, characterised in that the temperature monitoring element (8) is disposed in the mounting area (6) adjacent to the heating element (2).

7. The heating device according to claim 5 or claim 6, characterised in that the temperature monitoring element (8) is formed by an NTC resistance.
8. The heating device according to any one of the preceding claims, characterised in that the heat exchanging element (3) consists of a material which exhibits poor thermal conductivity in the lateral direction.
9. The heating device according to any one of the preceding claims, characterised in that there is provided a contacting device (9) disposed on the heat exchanging element (3) which is electrically connected to the electrical elements of the heating device.
10. The heating device according to claim 9, characterised in that the contacting device (9) is electrically connected to each heating circuit of the heating element (2) and the temperature monitoring device (8).
11. A continuous flow heater (100) comprising a heating device (1) according to any one of the preceding claims and a moulded part connected positively thereto in a pressure-resistant and thermally stable manner to form a fluid chamber, wherein the moulded part (50) has at least one inlet (51) and at least one outlet (52).
12. The continuous flow heater according to claim 11, characterised in that the temperature monitoring element (8) is disposed on the heat exchanging element (3) of the heating device (1) in an area situated close to the inlet (51) in the moulded part (50).
13. A method for producing a heating device (1) for fluids comprising the following steps:
 - providing a semi-finished product having poor lateral thermal conductivity;
 - forming a substantially flat heat exchanging element (3) from the semi-finished product having an inner surface (13) and an outer surface (14) and a substantially planar central area (4);

- applying a heating element (2) embodied as an electrical resistance heater to the central area of the heat exchanging element (3) leaving a mounting area (6); and
- applying a temperature monitoring device (8) to the mounting area (6) so that this is not influenced by the heating element (2) during operation of the continuous flow heater.

14. The method according to claim 13, characterised in that the temperature monitoring device (8) is applied directly to the heat exchanging element (3).

15. The method according to claim 13 or claim 14, characterised in that this comprises the further step: applying a contacting device (9) to the heat exchanging element (3) and electrically connecting to the electrical elements of the heating device (1).

16. The method according to any one of claims 13 to 15, characterised in that the heating element (2) and the temperature monitoring device (8) are applied to the same side of the heat exchanging element (3).

17. The method according to any one of claims 14 to 16, characterised in that the heating element (2) and the temperature monitoring device (8) together with the contacting device (9) are applied to the outer surface (14) of the heat exchanging element (3).

18. A method for producing a continuous flow heater (100) comprising the steps:

- producing a heating device (1) according to any one of claims 1 to 10;
- producing a moulded part with at least one inlet (51) and at least one outlet (52);
- positively joining the heating device (1) and the moulded part (50) so that the assembly is pressure-resistant and thermally stable.

19. The method according to claim 18, characterised in that joining together the heating device (1) and moulded part (50) involves inserting a sealing ring therebetween.

20. Use of a heating device according to any one of claims 1 to 10 in a dishwasher.
21. Use of a continuous flow heater according to claim 11 or claim 12 in a dishwasher.